MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

EME3066 – CAD/CAM

(ME)

23 OCTOBER 2019
9.00 am - 11.00 am
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 5 pages including cover page with 4 Questions only.

2. Answer **ALL FOUR** questions. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please write all your answers in the Answer Booklet provided.

Question 1

(a) **Table Q1(a)** shows the types of commonly used symbols according to ANSI for geometric tolerancing. Find their appropriate characteristics based on the symbols given.

*(Note: Copy the roman letters in **Table Q1(a)** to your answer script together with your choice of answers)*

[13 marks]

Table Q1(a)

Type of Tolerance	Characteristic	Symbol
Form	i	
	ii	
	iii	
	iv	
Profile	v	
	vi	
Orientation	vii	
	viii	
	ix	
Location	x	
	xi	
Runout	xii	
	xiii	

Continued...

(b) **Figure Q1(b)** shows a typical Modelling System of a vehicle using CAD. Illustrate the different stages involved in modeling the vehicle. For each stage you had provided, illustrate **ONE** advantage and disadvantage.

[12 Marks]

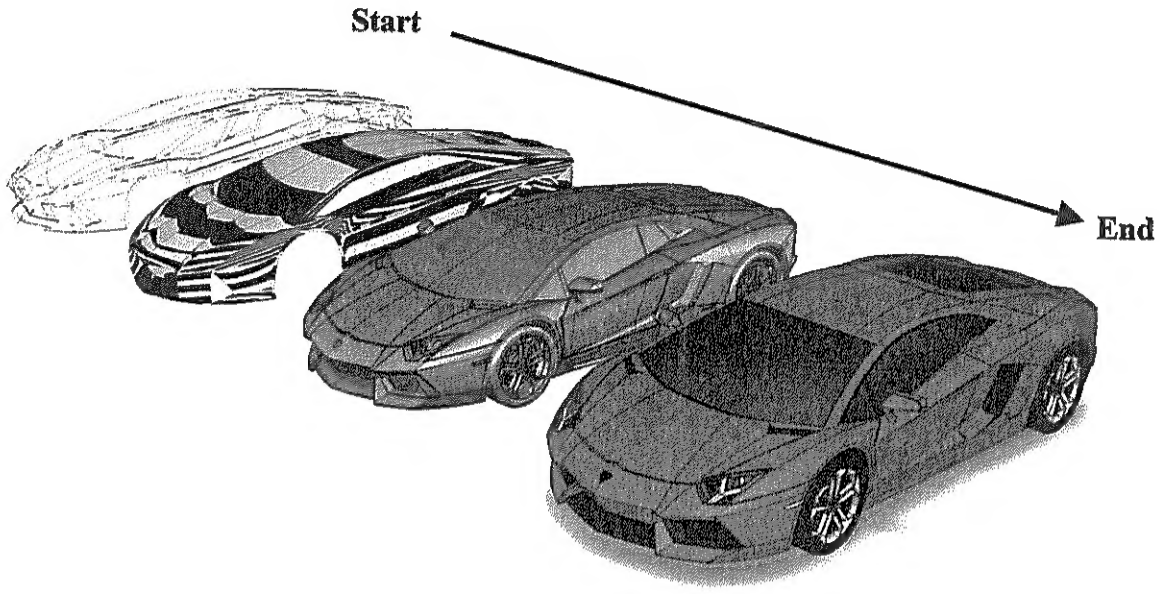

Figure Q1(b)

Question 2

(a) Differentiate between '***pre-processing***', '***fabrication***' and '***post-processing***' in rapid prototyping process. Explain your answers briefly.

[9 marks]

(b) With the aid of a diagram, illustrate how integrating Rapid Prototyping Technologies can decrease cost and time in a typical manufacturing sector.

[16 marks]

Continued...

Question 3

(a) By analyzing **Figure Q3a(i)** and **Figure Q3a(ii)**, find the respective axes designation as per the ISO standard.

(Note: Clearly write the roman letters of the arrows; ex: i: , ii: ,....x: ; in your answer booklet and write the appropriate axes designation.) **[10 marks]**

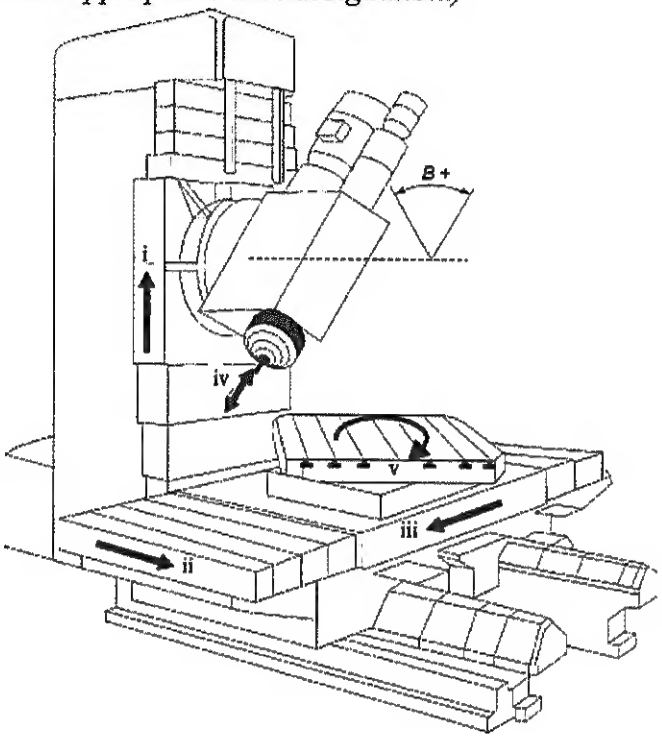

Figure Q3a(i)

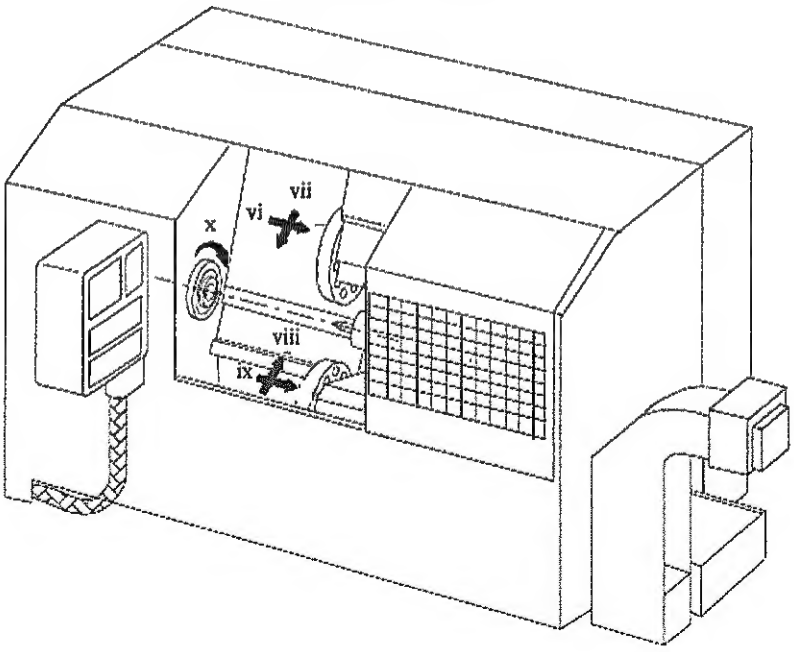

Figure Q3a(ii)

Continued...

(b) By means of a neat sketch, differentiate the **THREE** types of work-holding methods that are used in CNC machining centres.

(Note: Provide their working principals based on your sketch provided)

[15 marks]

Question 4

(a) What is '***Lead Time***'? By means of a neat diagram, illustrate how you can reduce '***Lead Time***' in the manufacturing of a product using concurrent engineering environment.

[10 marks]

(b) By means of a neat sketch, illustrate how tool monitoring and life systems works.

(Note: Label your sketch accordingly and briefly explain it)

[15 marks]

End of paper